ANALYSIS OF FAULTS IN INTERNATIONAL SHOWJUMPING COMPETITION

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INTRODUCTION

Performance analysis (PA) involves the systematic observation and analysis of factors identified to enhance performance in a specific sport to improve athlete decision-making (Williams, 2015). PA is commonplace in human sports, yet despite potential competitive advantages, its application in equestrianism, including showjumping, has been minimal to date. It is commonly believed by riders and trainers that faults in showjumping are not random, but are associated with particular types and / or locations of fences.

This study aimed to characterise faults and to establish if any relationship existed between fault accumulation and fence related factors in International showjumping competition.

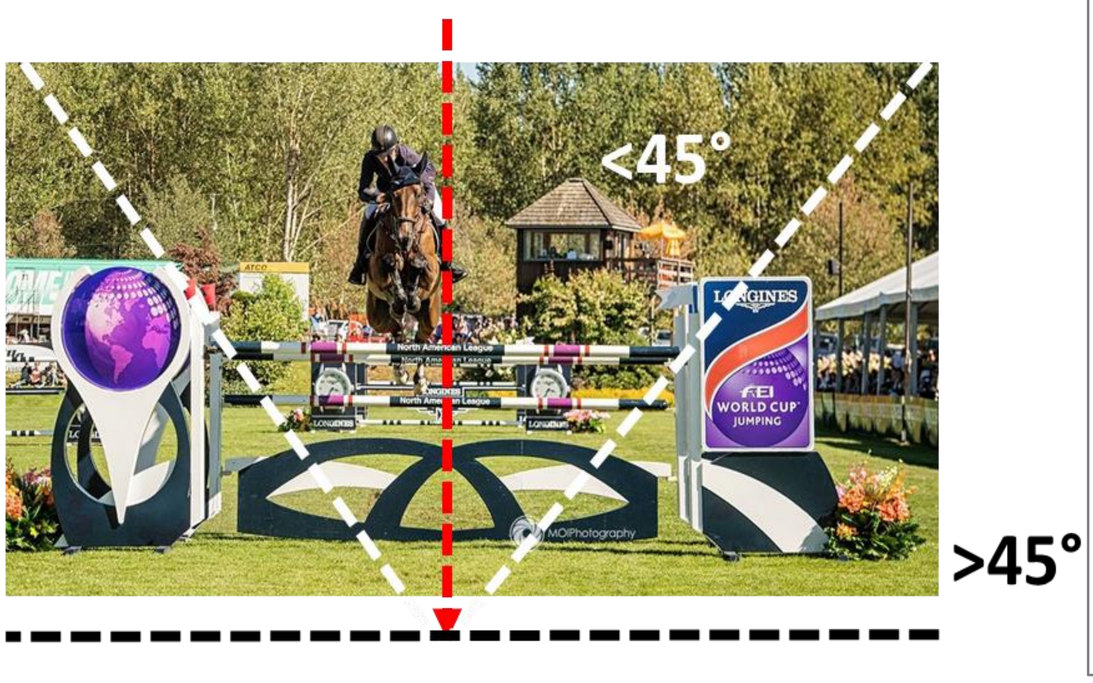

Fig. 1: Classification of A) fence type, B) approach

METHOD

- Sample: horses and riders competing in the 2nd round of the FEI Nations Cup competition, European Division, 2017 (n=170 combinations; n=8 events)
- FEI definition of faults: knocking down a pole/plank, displacing an obstacle, a foot landing in water jump, a refusal or run out.
- Recorded faults: number and location, and fence related variables: jumping effort (incremental), type, approach and direction (Fig. 1) for 2550 jumping efforts
- Frequency analysis classified the type of faults that were accrued
- A series of correlations and logistic regression (dichotomous variable: faults vs. no-faults) multivariable analyses examined if relationships existed between fault accumulation and fence related variables (alpha: $p < 0.05$)

RESULTS

- Most faults were due to knocking down a pole (Fig. 2.)
- A linear increase in risk occurs with increasing number of efforts with 70% of variance due to jumping effort number (Fig. 3)
- 2.8 times more knock-downs occurred in the 2nd half of the course (efforts 9-15) compared to the 1st half (efforts 107; $p < 0.05$)
- Increased faults occurred when horses approached fences straight (7.9%), compared to a slight (<45° from previous fence) left / right approach (6.2%) or on the left or right rein (>45° from previous fence; 3.8%; $p < 0.001$)

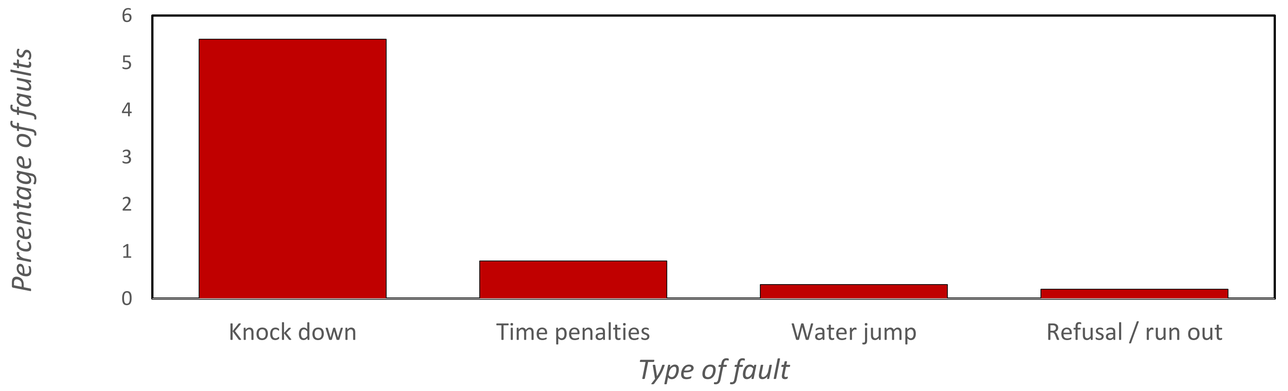

Fig. 2: Distribution of faults in FEI European Nation Cup competitions.

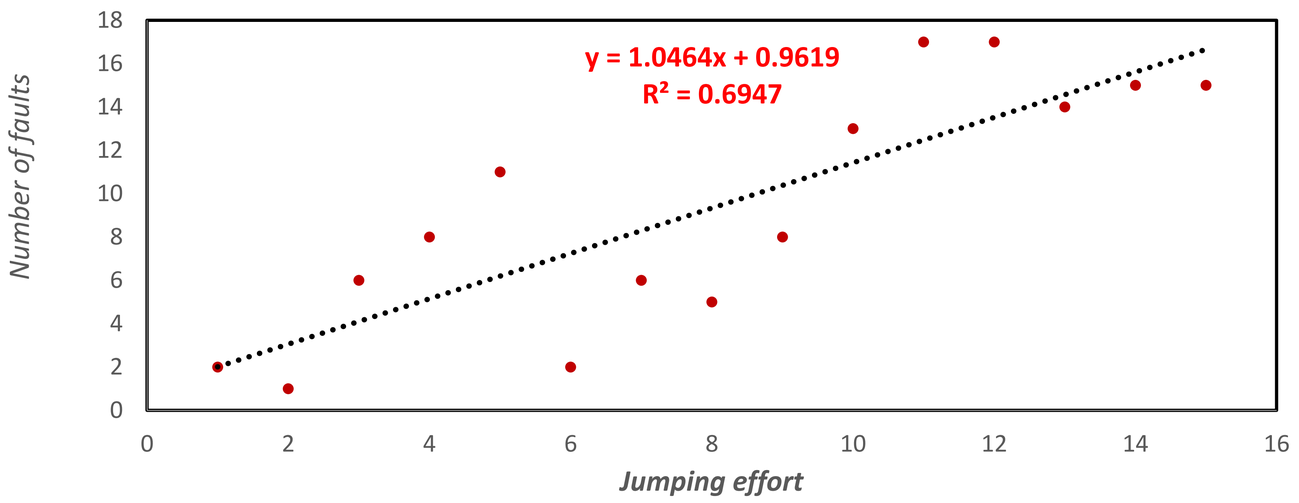

Fig. 3: Relationship between sequential jumping efforts and fault accumulation.

DISCUSSION AND CONCLUSIONS

This analysis suggests that for International Nations Cup competition, faults were not randomly distributed, showcasing the potential for PA to be used within equestrian sport. The application of PA could objectively evaluate competitive performances to identify key factors which are influencing success, such as factors which are related to gaining faults during showjumping. This information can then be used by riders, coaches, physiotherapists and veterinary surgeons to inform training regimens, and within competition strategy to enable riders and teams to gain a competitive advantage.

REFERENCES: Williams, J.M. Defining performance and measuring success, in Williams, J.M. and Evans, D. (Eds) (2015) Training for Equestrian Performance, Holland: Wageningen Press, pp. 25-35.

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